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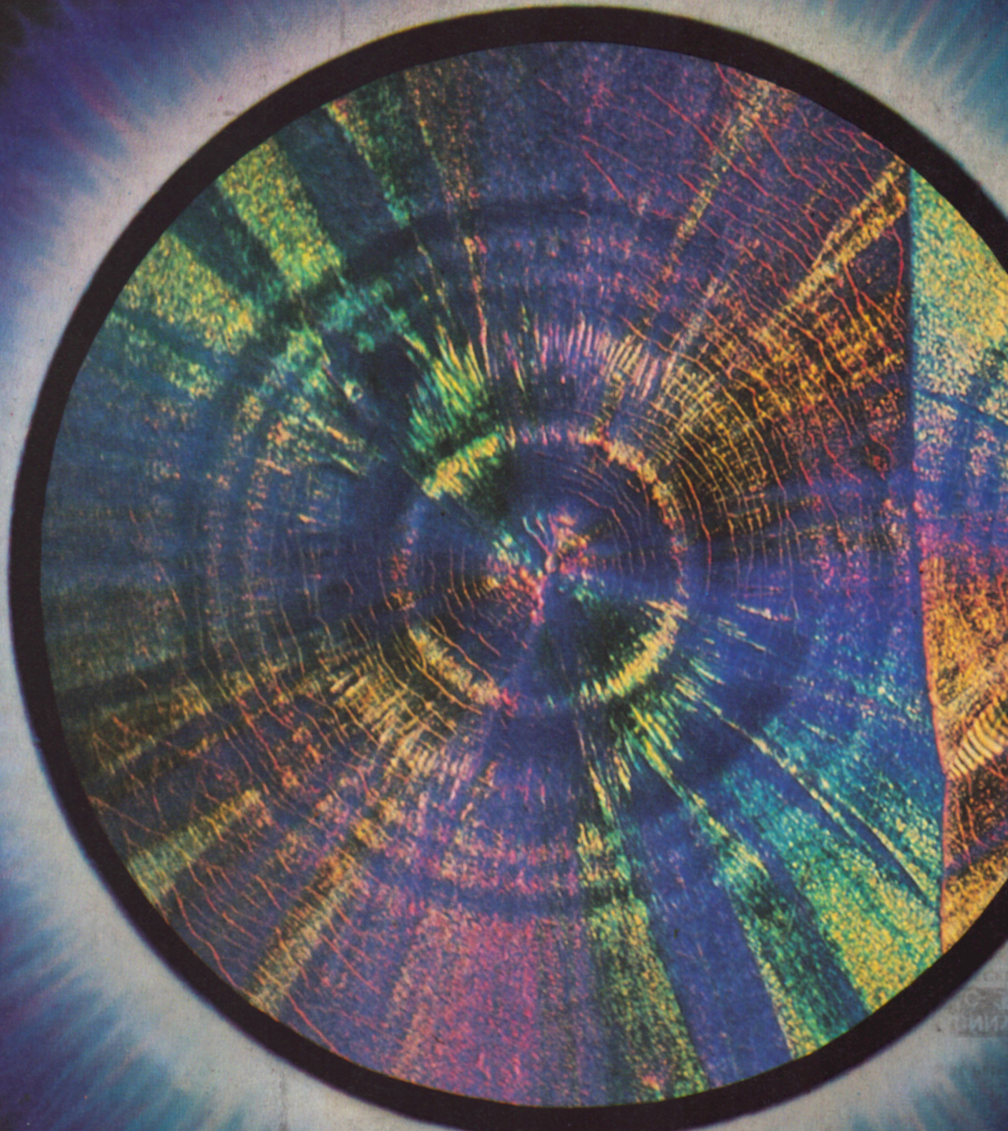
THE Unexplained

MYSTERIES OF MIND SPACE & TIME

Christ in India
Computing catastrophes
Psi: a practical approach
More psychic photos
Mind versus brain

124



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THE Unexplained
MYSTERIES OF MIND SPACE & TIME

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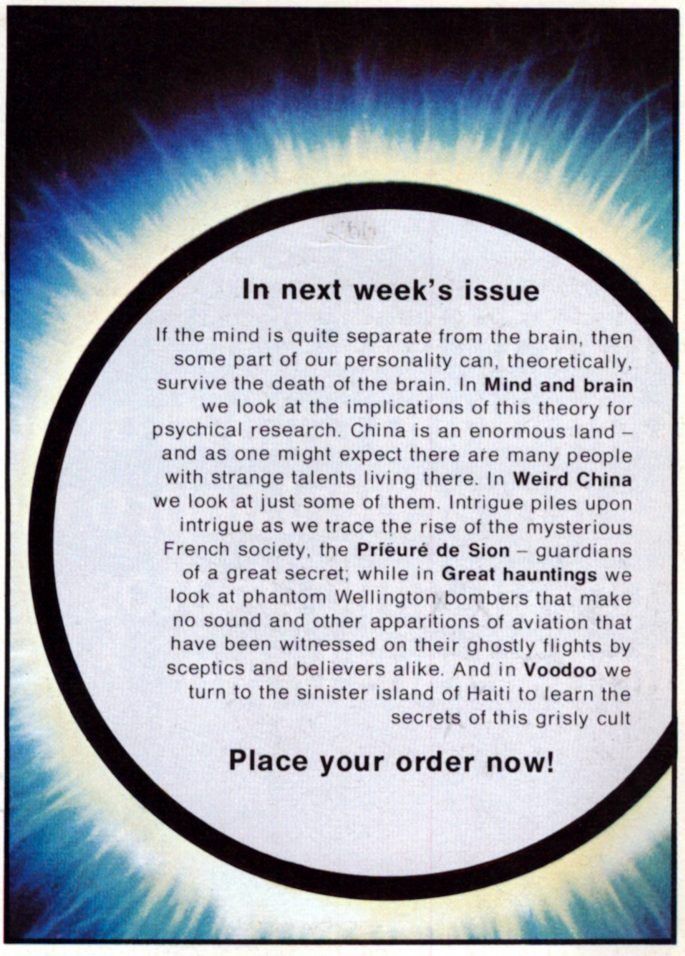

In next week's issue

If the mind is quite separate from the brain, then some part of our personality can, theoretically, survive the death of the brain. In **Mind and brain** we look at the implications of this theory for psychical research. China is an enormous land – and as one might expect there are many people with strange talents living there. In **Weird China** we look at just some of them. Intrigue piles upon intrigue as we trace the rise of the mysterious French society, the **Prieuré de Sion** – guardians of a great secret; while in **Great hauntings** we look at phantom Wellington bombers that make no sound and other apparitions of aviation that have been witnessed on their ghostly flights by sceptics and believers alike. And in **Voodoo** we turn to the sinister island of Haiti to learn the secrets of this grisly cult

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Did Christ die in Kashmir?

The Bible insists that Christ died on the cross. But a legend from the remote hills of northern India suggests that he survived the crucifixion and lived out his old age there. PETER JAMES explores this extraordinary claim

THE CITY OF SRINAGAR in Kashmir, remote in the hills of northernmost India, houses, it is claimed, one of the world's most precious and controversial archaeological relics. In front of a Muslim cemetery towards the centre of Srinagar stands a solitary rectangular building, described on a notice in the street outside as a *rauza bal* – a 'prophet's tomb'. Inside, a carved wooden plaque bearing the inscription 'the tomb of Yuz Asaf' indicates a chamber containing a simple stone tomb, confirmed as a holy monument by a state document of Srinagar from 1766. The text gives some brief details about the tomb's enigmatic occupant:

> in the reign of rajah Gopadatta . . . a man named Yuz Asaf came. He was a royal prince and renounced all worldly claims and became a legislator. He used to spend his nights and days in prayer to God, and passed long periods in solitary meditation. . . . He preached the oneness of God until death overcame him and he died.

And so the matter would rest, with this laconic epitaph to an obscure holy man, who lived, taught and died in Kashmir – except that *this* particular holy man is held by local tradition to have been none other than Jesus Christ.

The apparently incredible claim that Jesus died in Kashmir is upheld not only by the hereditary keepers of the tomb in Srinagar but by the adherents of the world-wide Ahmadiyya Muslim sect, who number several hundred thousand. The Ahmadiyya, and various writers sympathetic to their cause, have assembled a fascinating collection of legends and scraps of historical information from Iran, Afghanistan, Pakistan and India. From these, they believe, there can be written a final chapter in Christ's life – a chapter that is unknown to Western historians.

After the last deeds told of him in the New Testament – the resurrection, appearance to

Below: Lake Nagin, near Srinagar (inset), the capital city of Kashmir. Here, local inhabitants believe, Jesus Christ spent his last days, married and raised children – whose descendents still live in Kashmir

Left: *The Maries at the Sepulchre*, by a contemporary imitator of Andrea Mantegna (1431–1506). Arriving at Jesus's tomb, they found it empty. Shortly afterwards, Jesus appeared physically to them, and to many of the disciples. Some historians have argued that it is possible that Christ survived the crucifixion. If so, did he live out the rest of his days in the hills of Kashmir?

various disciples and ascension to heaven – so the Ahmadiyya's reconstruction goes, Jesus left Palestine to escape the jurisdiction of the Romans and the possibility of being crucified again. He took the road north through Damascus, bringing about the conversion of St Paul on the way, to seek refuge with the scattered Jewish communities further east. Accompanied by his mother Mary, he walked on through what are now Iraq, Iran and Afghanistan (then parts of Rome's rival empire, Parthia) to India, where he wandered, teaching prayer, monotheism and godliness. In the east he acquired the name Yuz Asaf – meaning, in Persian, 'Leader of those cured of sores [leprosy]'.

Some traditions say that Yuz Asaf came to Kashmir via Pakistan; when his aged mother died he buried her in the city of Murree, some 30 miles (50 kilometres) north-east of present-day Rawalpindi. Others say he travelled and taught in Ceylon (now Sri Lanka) before arriving in Kashmir, where all the traditions agree that he lived out the rest of his natural days. He was buried by his disciple Ba'bad ('twin') in Srinagar, where his tomb has remained a venerated holy spot until this day. And if these tales of a 'second life of Christ' are not enough, there are further stories to shock believers in Christ's death upon the cross. According to one Persian tradition, Yuz Asaf was persuaded by an Indian king to take a local woman on as housekeeper. Her duties evidently extended beyond cooking and cleaning, however, as she is said to have borne him children. As if to oblige the Persian story there is actually a man in Srinagar (a local politician and newspaper editor as well as official keeper of the tomb of Yuz Asaf) who claims to trace his ancestry directly back to Jesus.

Life of Christ?

The initial temptation to reject the whole story as a delusion or a ludicrous and elaborate hoax is strong. But the prolific legends about Yuz Asaf are genuinely ancient, and the fact that they tell of a figure with an extraordinary resemblance to the founder of the Christian religion merits their consideration – at least for sheer curiosity value. For example, the 10th-century Islamic scholar Al-Said-us-Sadiq recounts a Hindu story of the arrival of the holy Yuz Asaf in Kashmir. His extensive travels, death and burial are described – and his teachings of the desirability of shunning worldly desires, the value of humility and the impending arrival of the kingdom of heaven. The inclusion of a parable about truth falling like scattered seeds on the road, good land and waste land, similar to Jesus's own parable of the sower (Mark 4:3–20), suggests that we may be dealing here with the life of Jesus Christ himself. Sadiq wrote, of course, at a time when the teachings of the New Testament were widely available to Islamic scholars and he could easily have

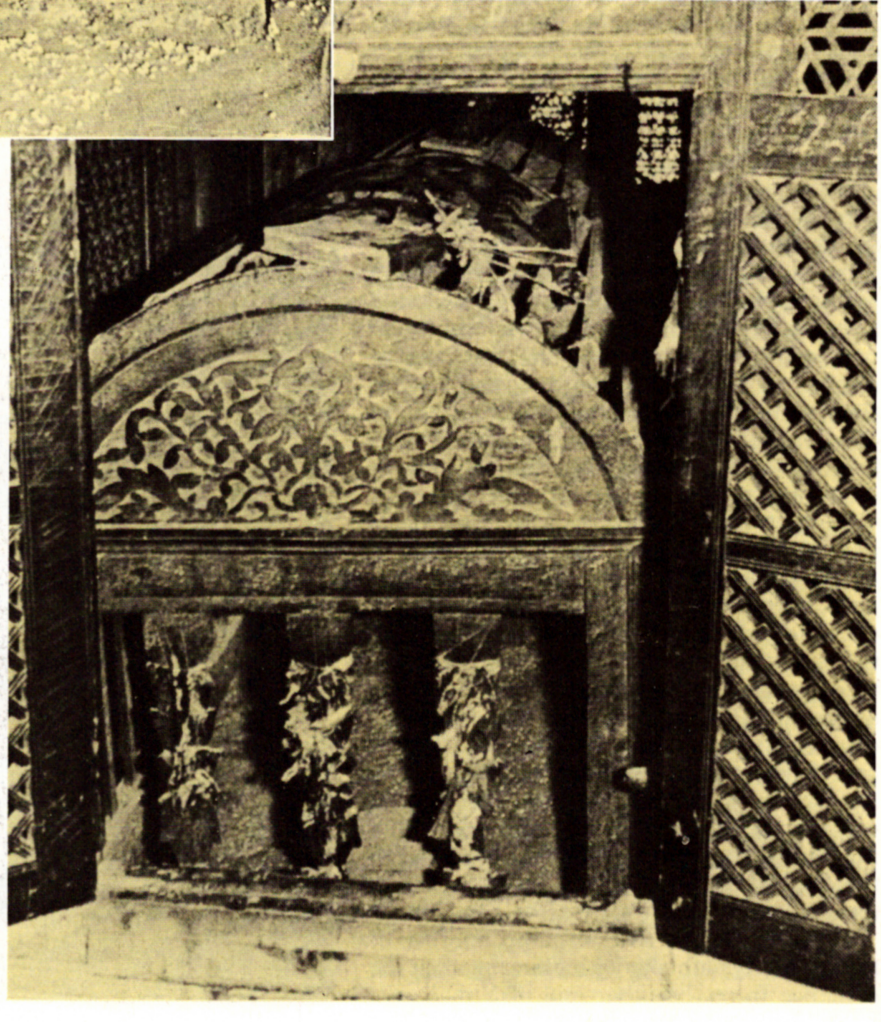
Below: this plain building, which stands outside a Muslim cemetery in the centre of Srinagar, allegedly houses the tomb of one Yuz Asaf, a holy man – whom the local inhabitants believe to have been Jesus Christ himself. Inside, ornate trelliswork (below right) conceals the simplest of tombs (right). It lies, interestingly, in an east-west alignment. Muslims bury their dead facing north-south, and Hindus do not bury their dead at all – but Jewish graves are often aligned east-west. So Yuz Asaf may well have been a saint of the Jewish tradition

added such details himself. But the resemblances do show that the identification of Jesus with Yuz Asaf is itself quite ancient, going back some thousand years.

As one reads the legends of Yuz Asaf – gathered by the Ahmadiyya from sources as far apart as Iran and Sri Lanka – the conviction grows that we are dealing with a facsimile of Christ, albeit in most unfamiliar surroundings. The traditions describe him as 'an auspicious man, fair in colour and clad in white garments', who performed miracles, communicated with angels and announced himself to be the son of a virgin. In fact every detail of his character and behaviour is 'Christ-like', making it most unlikely that the story represents Christian mythology foisted onto a genuine Hindu saint called Yuz Asaf – the traditions seem indisputably to be talking about Jesus Christ, whatever their origin. It is an integral part of all the tales that he was a foreigner, a prophet from much further west. One Persian manuscript specifies his point of origin as the Holy Land, the term used by Muslims as well as ourselves for Palestine (now Israel).

The Srinagar tomb itself is an interesting anomaly in the local archaeology. While the stone cover of the tomb is of Muslim date, underneath is a more ancient burial aligned east-west. Since Muslims bury their dead aligned north-south, and Hindus do not bury their dead at all, the likelihood is that the occupant was a Jew – Jewish graves, including many in Kashmir, are often aligned east-west. Islam recognises no prophet after Mohammed, so the strong local tradition that the tomb houses a prophet suggests, in predominantly Muslim Kashmir, that it dates from before the life of Mohammed (*c.* 570–632). These pointers strongly suggest that the tomb contains the remains of a 'prophet' of Jewish race buried at some time before the rise of Islam.

An investigation of the tomb has been carried out by Professor Fida Hassnain, director of the archives and antiquities of Kashmir. His own study of the documents concerning the tomb has convinced him of its authenticity, though solid archaeological evidence of its date and character is still conspicuously lacking. A plan for a full-scale excavation in the 1950s backed by Ahmadiyya funds eventually foundered, but Hassnain's surface probings have turned up one intriguing find. In the north-east corner of the chamber is a stone block once used as a table for lighting candles by pilgrims to the tomb. Scraping away thick layers of wax, Hassnain found a rosary and a crucifix left by Christian visitors, and then uncovered the



surface of the stone. It shows, curiously enough, what appears to be the impression of two human feet, deeply gouged on the insides. The 'impressions' are obviously carved – and are perhaps intended to represent the feet of a crucified man.

In the absence of firm archaeological corroboration, the case for Christ's burial in Kashmir stands on the evidence of the legends. The approach of the Ahmadiyya sect to these is straightforward. There exists a corpus of legends, strongly localised in the northern hill country of India, with straggling clues trailing westwards to the Middle East, that a Christ-like teacher from the Holy Land sought refuge in their country and lived out his old age in Kashmir. The obvious explanation of these legends is that Christ retreated to the East after his ordeals in Palestine. After all, the last days of Christ's stay in the Holy Land are, to say the least, shrouded in mystery. To tie the story up, the Ahmadiyya point out that the dates of the kings, such as the rajah Gopadatta, in whose reigns Yuz Asaf was said to have been active, all fall around the middle of the first century AD, in the decades following Christ's crucifixion around the year 33. Here is yet another snippet of evidence that appears to support the Yuz Asaf legend. But do, in fact, the Eastern legends provide valuable clues to the final 'disappearance' of Christ so mysteriously described in the New Testament?

Perhaps we can assess the probability of the Ahmadiyya theory by looking again at the evidence from the other end of Yuz Asaf's long journey, Palestine, and the biblical account. There are two main questions. Could Jesus really have survived the rigours of the crucifixion? And if he did, is India, of all places, historically plausible as the last resting place of a first-century guru from Palestine?

Christian theology, of course, has much to say about the first question. It insists both that Christ died on the cross *and* that he continued to live, after the resurrection, in more than spirit form. The New Testament is most insistent that Christ's resurrection is to be understood in the *physical* sense. When Mary Magdalene and her friends came to the tomb they found the body had gone and the stone sealing it rolled away – if Christ had appeared only as a wraith, rolling away the stone would have been unnecessary. Shortly afterwards he appeared to Mary – then, meeting two travellers on the way to Emmaus, joined them at supper in most unghost-like fashion (Luke 24:13–32). He then arrived at a meeting of the remaining 11 disciples, who 'were terrified and affrighted, and supposed they had seen a spirit' until Christ persuaded them to feel him and see that he was real flesh and blood (Luke 24:36–40; John 20:27–8). As a further demonstration he then sat down and had a meal while he talked to the baffled disciples.

Left: the conversion of St Paul on the road to Damascus, in a detail from a 19th-century stained glass window in Lincoln Cathedral. If the account of Christ's survival of the crucifixion is true, such stories, in which Christ allegedly made physical appearances, take on a new significance

Above left: a stone block found in the north-east corner of the Yuz Asaf shrine, showing what appears to be the impression of two human feet bearing the marks of Christ's wounds

Below: the Srinagar poet Sahibzada Basharat Saleem, who traces his ancestry to Jesus Christ. According to the legend, Christ married a Kashmiri girl

Left: a 19th-century engraving, after a painting by Carle Maratte, of the death of the Virgin Mary. The Kashmiri legend has it that, after Jesus's survival of the crucifixion, he and his mother travelled through what are now Iraq, Iran, Afghanistan and Pakistan – where, at Murree, Mary died; he then travelled on to India alone

As well as these appearances recorded in the Gospels, St Paul adds that Christ was seen by 'about five hundred brethren at once' and on other occasions by himself and St James. What are we to make of these claims about Christ's resurrection? A rational, materialistic approach might conclude that no 'resurrection' of a completely dead man could have happened, and that *if* the stories of Christ's appearance after the crucifixion are authentic, then Christ must have been buried in a comatose state from which he later awoke. Today doctors are still arguing about the precise definition of 'death', and the annals of 20th-century medicine are full of cases of apparently 'dead' people coming back to life. One interesting example comes from the English poet and scholar Robert Graves, who added as a footnote to his own study of the crucifixion that he was logged 'died of wounds' by an experienced medical officer after the battle of the Somme in 1916. He was left in a corner, unattended, for a whole day before he showed signs of recovery:

> I managed to conserve my vital heat for little less than the thirty hours which Jesus spent in the tomb, with only a stretcher between myself and the bare earth; and the physical resistance of Oriental saints is notoriously greater than that of European sinners.

A real resurrection?

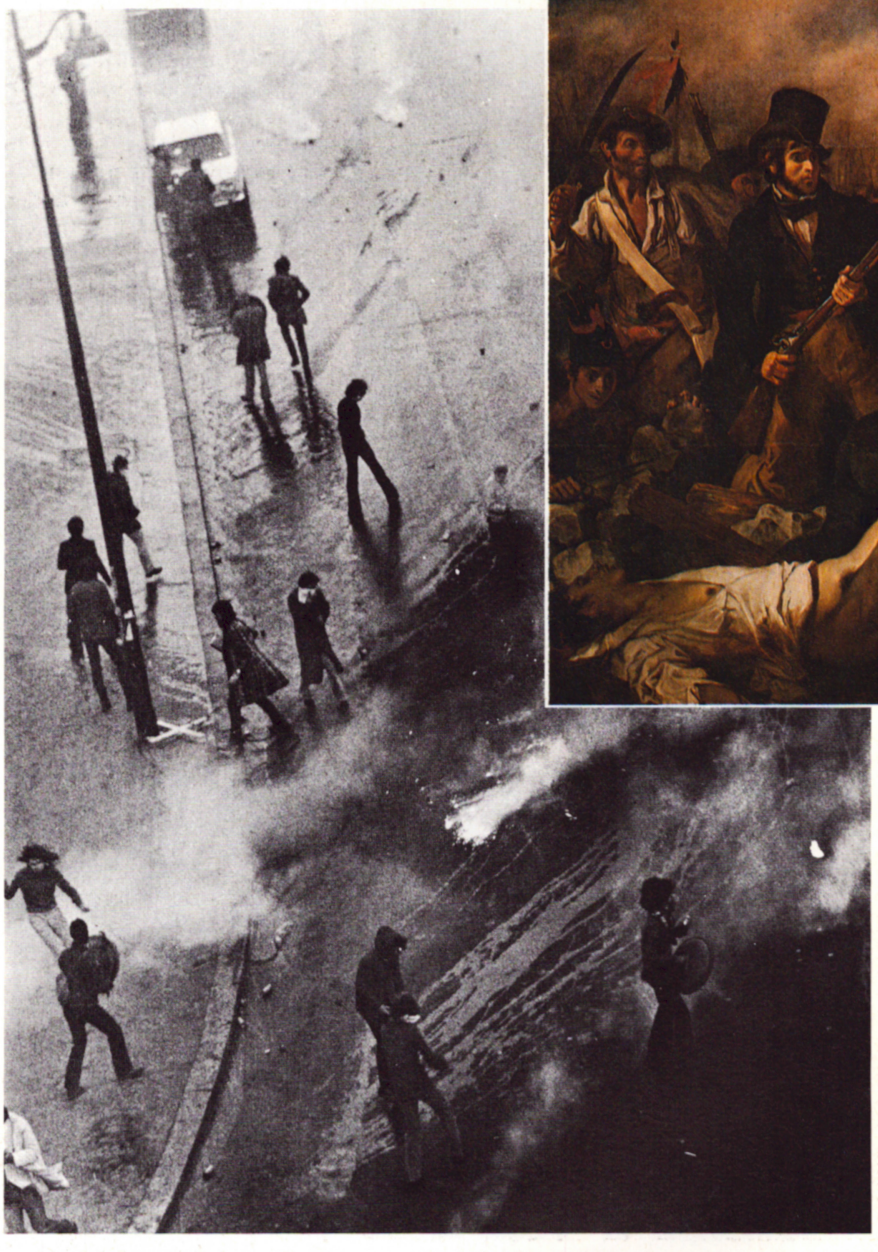
It does not seem beyond the bounds of reason to entertain the idea that someone with the extraordinary strength of mind exhibited by Jesus could revive after remaining in a death-like state of suspended animation for up to two days. This feat is, after all, a commonplace 'trick' of Indian yogis, who survive after days of burial underground (see page 2350). Such a solution would seem to satisfy the evidence of the New Testament. It would of course be unacceptable to those Christians who insist on a real resurrection from the dead as a sign of Christ's divinity.

Neither the extreme Christian nor the extremely sceptical view is acceptable to the historian. It is not reasonable to treat an article of faith as historical evidence; but, on the other hand, the sceptics' light dismissal of the post-crucifixion appearances of Christ flies in the face of what is, after all, the most natural explanation for the explosive growth of the early Christian Church. For, although we have only the word of the New Testament writers for the reappearance of Christ (unlike the crucifixion, for which we have evidence from Roman and Jewish writings of the period), we *do* know that Christianity spread like wildfire in the middle of the first century AD. What can account for this? The New Testament presents the highly plausible scene of a small group of followers, made doubtful and utterly disillusioned by the arrest and crucifixion of their leader, subsequently inspired and revitalised by the return of the Messiah. The resurrection of Christ, testified to by numerous witnesses, is the lynchpin of the faith of the early Christian apostles; 'And if Christ be not raised, your faith is in vain,' says St Paul (1 Corinthians 15:17). But what if Christ really did continue to live after the crucifixion – not because he was resurrected, but because he did not die in the first place?

On page 2538: we look at the biblical evidence that Christ survived the crucifixion

A critical condition

Mathematicians found themselves provoking enthusiasm and hostility among their academic peers and in the wider world when they began to apply catastrophe theory to the behaviour of animals, people and societies.
HILDI HAWKINS traces the debate



THE REVOLUTIONARY new mathematical language furnished by catastrophe theory has been applied to an extraordinary number of special problems in psychology, the life sciences and the social sciences. In each of these applications there is some jump, some discontinuity, in the behaviour of the object of study. It may be an anorexic girl's alternations between starving herself and gorging herself. Or it may be the sudden swarming of locusts, and the swarm's equally abrupt dispersal; or a sudden jump in the inflation rate; or even the collapse of the Roman Empire. It is precisely because of these jumps that catastrophe theory, the mathematics of discontinuities, promises to be of especial value in describing such behaviour.

All of these examples have been analysed by serious and competent scientists. The theory has also been used in less reputable hands as a talisman to guide people in coping with the stress of 'personal disasters'. In between these extremes lies a range of cases in which the validity of applying catastrophe theory is hotly debated by experts.

Here is an example of the use of the theory in sociology. Mass hysteria is a well-known phenomenon in which the individual – animal or human – abandons his own normal behaviour and may commit acts that are totally out of character or even dangerous to him, apparently because his personal identity is taken over by what might be called the collective consciousness of the group of which he forms a part. An historical example is the revolutionary crowd that stormed the Bastille in 1789. This ragged and disorganised group was able, when the critical moment came, to act purposefully and decisively in achieving its aims.

Brian Inglis has suggested that such behaviour may be a vestige of a primitive instinct in which the good of the individual, in moments of danger, is subordinate to that of the group or species. But the mechanism by which mass hysteria spreads is not understood, though there is a certain amount of evidence to suggest that messages may be carried by subtle scents called pheromones (see page 727). An alternative hypothesis has been put forward by the English biologist Rupert Sheldrake. His hypothesis of 'formative causation' suggests that living things receive their form by 'tuning in' to a kind of biological field – called a morphogenetic field – that somehow connects beings with similar form. If this is true, it is perfectly reasonable to suppose that large crowds of people or animals can communicate their mood to each other by tuning in to their collective morphogenetic field (see page 1141).

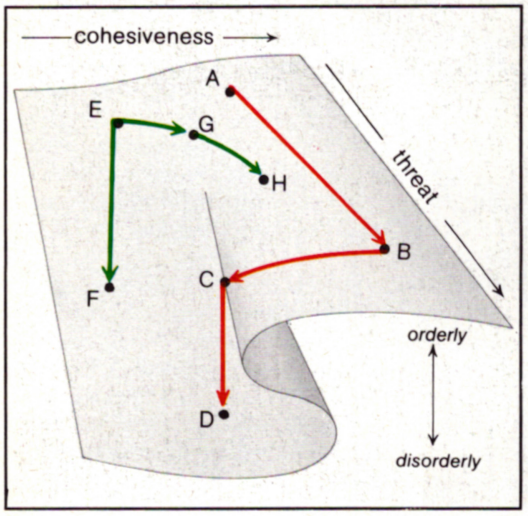
Let us see what light catastrophe theory can cast upon what happens when people act in groups. At the very least, it may be able to help us organise the knowledge we already have; it may suggest some new avenues of research; and some experts in catastrophe theory go as far as to assert that it may be used to generate predictions – perhaps even quantitative ones – about specific topics.

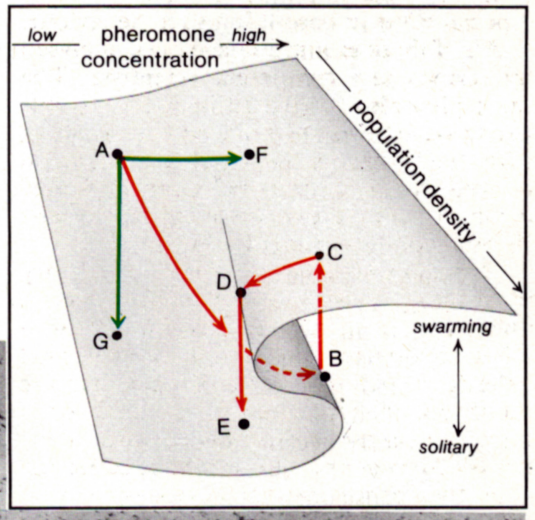
Consider the use of catastrophe theory to

Sometimes a mob transforms itself spontaneously from a rabble into an orderly group capable of purposeful action aimed at common goals. Such a moment came for the Parisians who stormed the Bastille in July 1789 (top) and ushered in the French Revolution. But the transformation failed to come for a demoralised knot of Parisian rioters in 1972 (above). Catastrophe theory has been used in an attempt to get to grips with such unforeseeable jumps between order and disorder

Below left: in terms of catastrophe theory, a well-trained army unit, being highly cohesive, is represented by the point A. Under threat, it becomes more tightly knit, and more orderly in its behaviour (B). A loss of group cohesion is not disastrous until the 'fold' is reached – when there is a sudden collapse into disorder (C-D). A mob, on the other hand, is not cohesive (E) and becomes less so under threat of danger (F). But if its cohesiveness can be raised it may move onto the upper sheet of the graph (G) and become even more orderly as the threat increases (H)

Below right: surprisingly, locusts are normally solitary (A). As they multiply, the level of a pheromone (a chemical 'messenger') that they secrete increases. Finally the locusts jump to the graph's upper sheet (B-C) – that is, they swarm (below). They produce less pheromone, and the swarm finally breaks up (D-E). Spraying the locusts with pheromone could cause premature swarming (F), checking their breeding. Or reducing the pheromone could keep them on the lower sheet (G), well away from the 'fold'



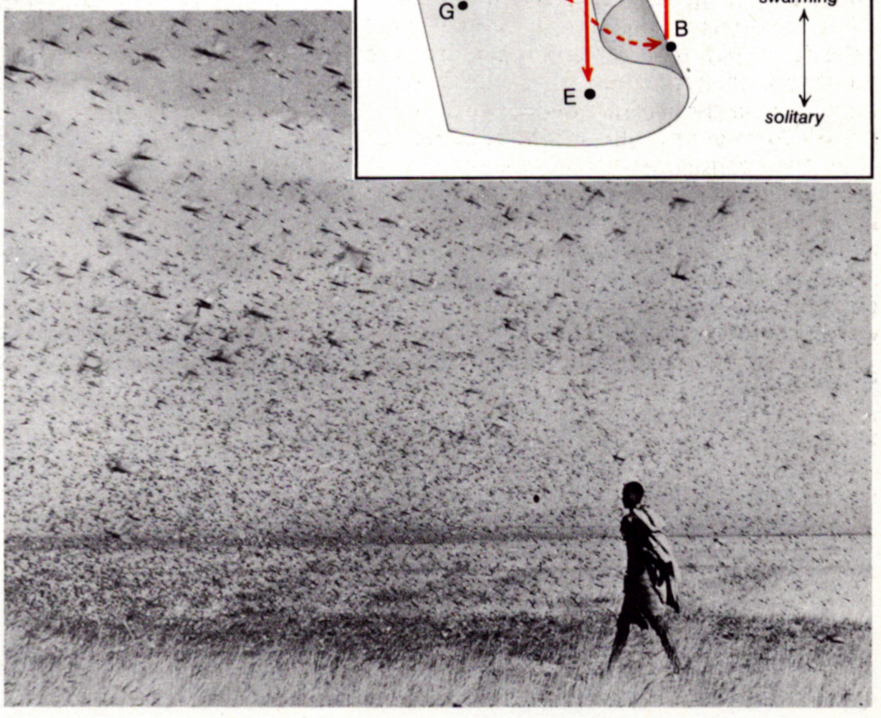


describe one aspect of the behaviour of groups of people: the degree of orderliness with which the group acts together. Assume that there are two controlling factors or 'control variables': the group's cohesiveness – the degree to which members of the group identify with the group and its aims – and the level of imminent danger as the group itself perceives it. Since we are describing a catastrophe with two control variables, any catastrophe that occurs must take the form of a cusp (see page 2443).

It may be helpful to think of the concrete example of an army on a battlefield. Once again this is represented by a point moving on a surface with a fold in it (see diagram above). Movements across the diagram represent changes in the group's cohesiveness, while forward and backward movements represent changes in the degree of danger, as perceived by the group. The corresponding vertical movements that result from the shape of the surface represent changes in the orderliness of the group's behaviour.

A well-trained army unit has high cohesiveness: the training the soldiers have received induces them to regard the integrity of their unit as of prime importance. The unit is then represented by point A. It will become increasingly tight-knit and closely co-ordinated as it perceives a higher level of danger (A–B). Its cohesiveness may decrease, however – for instance, because the soldiers see some of their comrades running away. At first this may happen to only a slight extent (B–C), but if the slackening of the bonds between the group members goes too far, there may be an abrupt descent into panic (C–D), as the point representing the group's behaviour moves past the fold in the behaviour graph.

An untrained mob, on the other hand, generally becomes less orderly as danger increases (E–F). But suppose the mob's sense of collective identity, its cohesiveness, increases – perhaps because a leader emerges who rallies the crowd. The point representing the crowd's behaviour may reach the

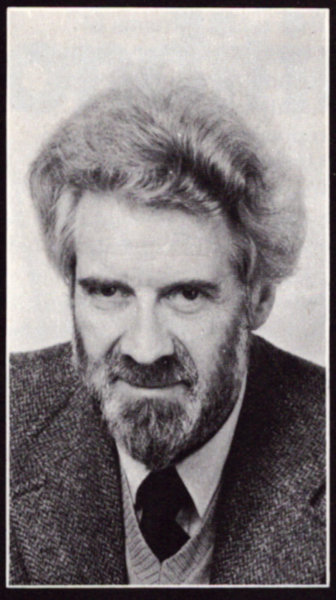


upper surface of the folded sheet (E–G). Then, as danger increases, the group will become increasingly organised and purposeful (G–H).

The same 'elementary catastrophe' has been used to analyse the phenomenon of locust swarms. Most of the time, locusts live unobtrusively in an ecological balance with the local vegetation and wildlife. Every few years they gather into groups that destroy vegetation over vast areas. It is now known that one of the factors controlling the swarming of locusts is the size of the locust population. Another is the amount of a certain pheromone that the creatures produce in greater quantities at this time.

Again, this behaviour can be described using the cusp catastrophe – and a close look at the theory suggests a number of ways in which swarming could be checked. For example, it turns out – surprisingly – that either a lowering *or* an intensification of the levels of pheromone concentration in the air surrounding the locust swarms might be effective. Lowering the amount of pheromone present, or finding some way of rendering it ineffective, will remove the possibility of swarming. Increasing its concentration, on the other hand, would encourage the locusts to swarm prematurely. This would tend to check the population increase, for swarming locusts spend less time in breeding. And if the population is thus held back, there can be no massive swarming.

So far, so good. But another, remarkably similar, application of the theory – again in the field of sociology – excited a great deal of angry controversy. In 1975 Christopher Zeeman, one of catastrophe theory's leading proponents, collaborated with prison psychologists to analyse the causes of a riot in a British prison that took place in 1972. They used publicly available data concerning the numbers of prisoners who requested meetings with the warder, the numbers who asked for transfers from particular cell blocks, and so on. They then drew a graph incorporating the simple cusp catastrophe, and purporting to show how the likelihood of prison unrest depended on the prisoners' tension and alienation from the prison authorities.



Catastrophe theory has been applied to many specific problems by Professor Christopher Zeeman of Warwick University (above). One of the most controversial pieces of research that he did was concerned with the behaviour of prisoners at Gartree Prison (below), where there had been unrest in 1972. He and his co-workers attempted to find out the relationship between such unrest and the prisoners' 'tension' and 'alienation'. Among the results of the study were a number of recommendations for the management of the prisoners. Another was a hail of criticism from those who saw the work as an instrument of 'social control'

Their report made only one recommendation, a singularly uncontroversial one: that prison officers would do better to deal with unrest by negotiation than by the use of force. Nevertheless, a number of critics saw this work as a step towards using catastrophe theory as an instrument of repression, and Jonathan Rosenhead, a social scientist, rather hysterically accused Zeeman and his colleagues of applying the theory

> not for liberation but for social control. Another management tool is added to the existing battery of science-based techniques for keeping prison populations subjugated – behaviour modification, aversion therapy . . . psychosurgery, riot gases and impact weapons.

Modest claims, grandiose hopes

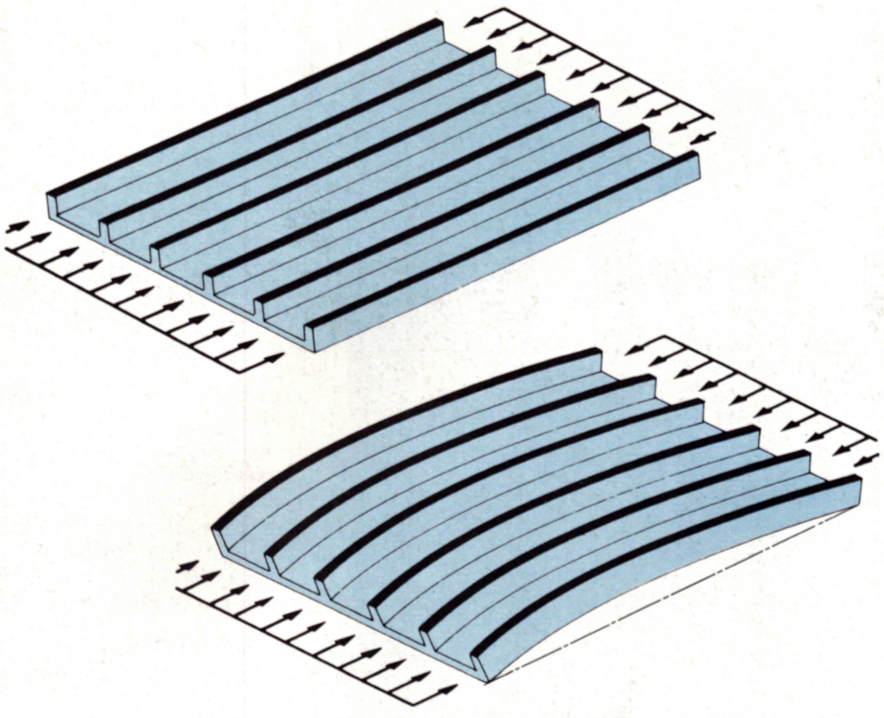
This kind of criticism, of course, does nothing to invalidate the theory itself, and it does seem that catastrophe theory can play a useful role in such situations – even if it cannot directly answer our questions about the nature of the processes involved.

The claims made by the theory's founder René Thom in applications like these are, as we have seen, modest; but his hopes for its application in the field of morphogenesis, the creation of forms, are grandiose. Physics has only begun to address itself to the problem of how things come to have the shapes they do – as Thom says, we can *see* far more than we can *say*:

> If you want to know what happens when you throw a stone into a pond, it is infinitely better to make a trial and film it than to attempt to theorise about it; the best specialists in fluid dynamics would certainly be unable to tell you more about it.

Why do certain forms crop up again and again in nature? A particular type of spiral appears in the snail, in the curling fronds of a fern, and in the closely packed stamens of a daisy; and many people have commented on the similarity between the branching patterns of a river system, of the branches of a tree and of a nerve cell.

Thom believes that catastrophe theory, with its qualitative approach, will prove



useful in the analysis of such questions:

> The choice of what is considered scientifically interesting is . . . to a large extent arbitrary . . . many phenomena of common interest, in themselves trivial – for example, the cracks in an old wall, the shape of a cloud, the path of a falling leaf or the froth on a pint of beer – are very difficult to formalise, but is it not possible that a mathematical theory launched for such homely phenomena might, in the end, be . . . profitable for science?

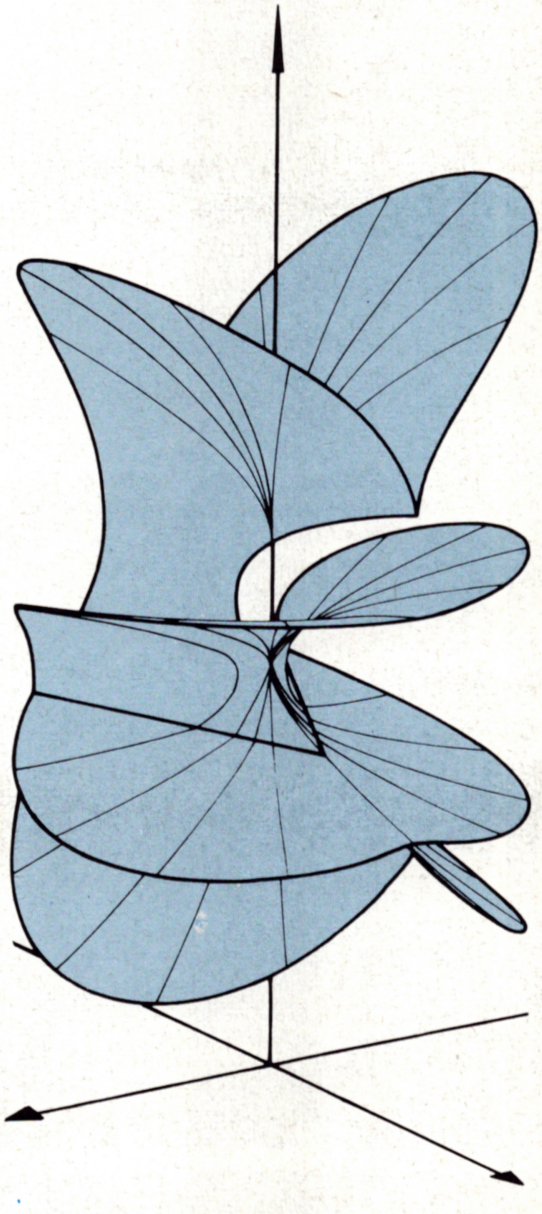
Thom believes that catastrophe theory can be applied to the problem of the development of form in living things – and thence, perhaps, to form in general. The process by which plants and animals take up their forms is still mysterious. Thom suggests that the elementary catastrophes may be linked with form in much the same way that the rules of geometry are linked with some of the shapes that appear over and over again in nature.

Some critics of catastrophe theory complain that its champions claim it can explain *everything*. Whether or not its importance lies in its power to explain *anything* precisely is, as we have seen, a debatable point; but, nevertheless, it seems reasonable to ask a controversial question. The power of catastrophe theory lies in its capacity to describe behaviour that is not continuous. Paranormal phenomena are, almost by definition, sharp divergences from normal behaviour, virtually discontinuous with it. Is it possible, therefore, to use catastrophe theory to deal with paranormal phenomena?

Confronted by this question, most mathematicians react with unreasonable horror. A rational appraisal of the question prompts a rational answer, however: no, not immediately. But although Thom's pioneering work does not have any obvious application to paranormal behaviour, some of the work being carried out in catastrophe theory hints that the paranormal, too, may one day come within its scope. Such a claim certainly does not conflict with Thom's own view of the future of his theory. Thom's grand vision of catastrophe theory includes paranormal events, because it includes everything that happens in the world. In fact, in Thom's view catastrophe theory aspires to the ultimate ideal of describing the world in terms of a single, incredibly complex, multidimensional surface.

The ambition to create such a theory of the world must seem to some quixotic, even foolish. But Thom is hopeful. And, in a gesture of praise of the human mind, he says:

> We shall have to find the best means . . . to formalise the unformalisable. For this task the human brain, with its ancient biological heritage, its clever approximations, its subtle aesthetic sensibility, remains and will remain irreplaceable for ages to come.



In engineering and physics catastrophe theory gives rise to structures of extraordinary complexity – and beauty. It has been applied to the buckling of a metal plate stiffened with ribs when stressed longitudinally (above). In the graph describing the plate's behaviour (right) horizontal movements represent changing geometrical imperfections in the plate; the height of a particular sheet of the folded surface shows the amount of stress that will cause buckling. Intricate as this surface is, it is merely a three-dimensional cross-section of a five-dimensional surface, impossible to picture

Further reading

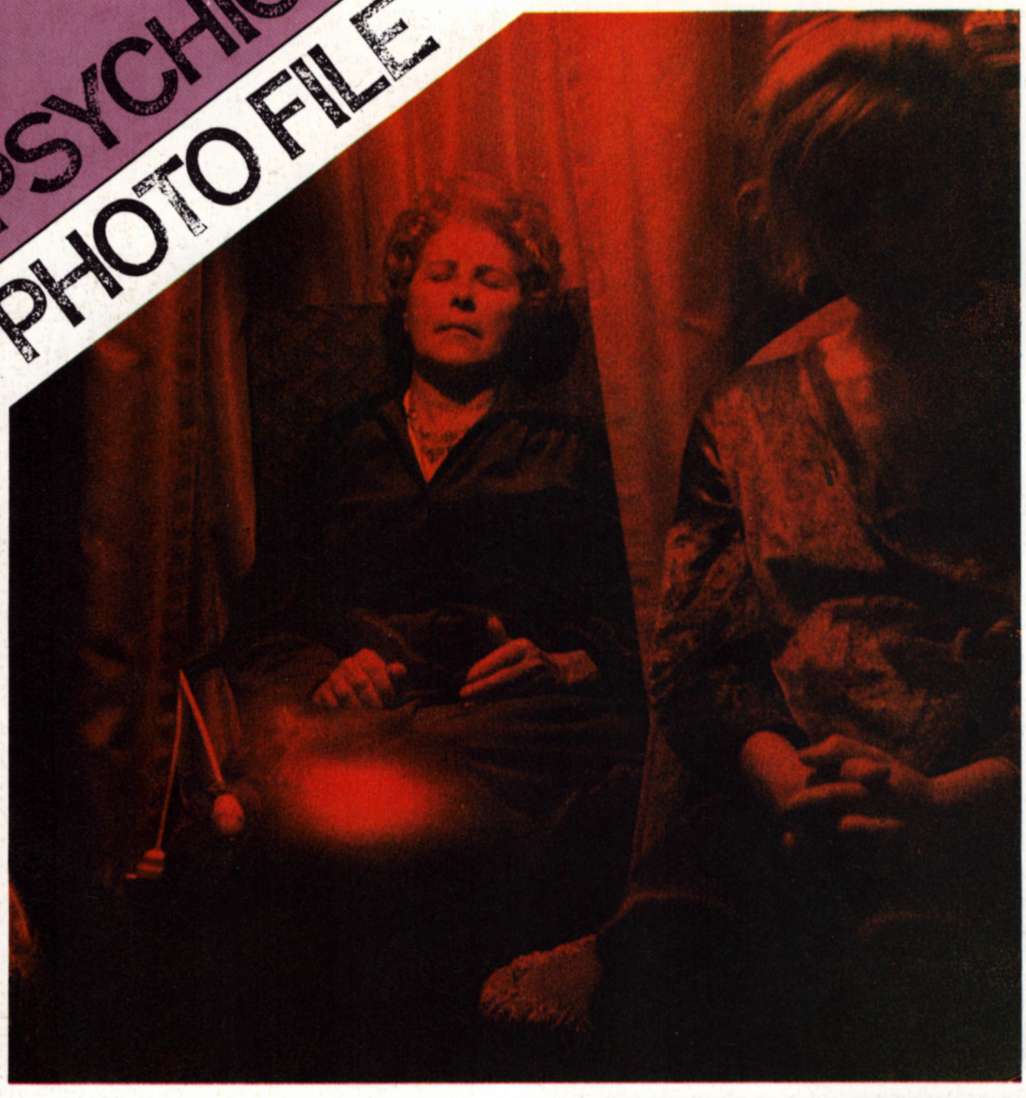
T. Poston and I. Stewart, *Catastrophe theory and its applications*, Pitman 1978

René Thom, *Structural stability and morphogenesis*, Benjamin 1975

J.M.T. Thompson, *Instabilities and catastrophes in science and engineering*, John Wiley 1982

A. Woodcock and M. Davis, *Catastrophe theory*, Penguin 1980

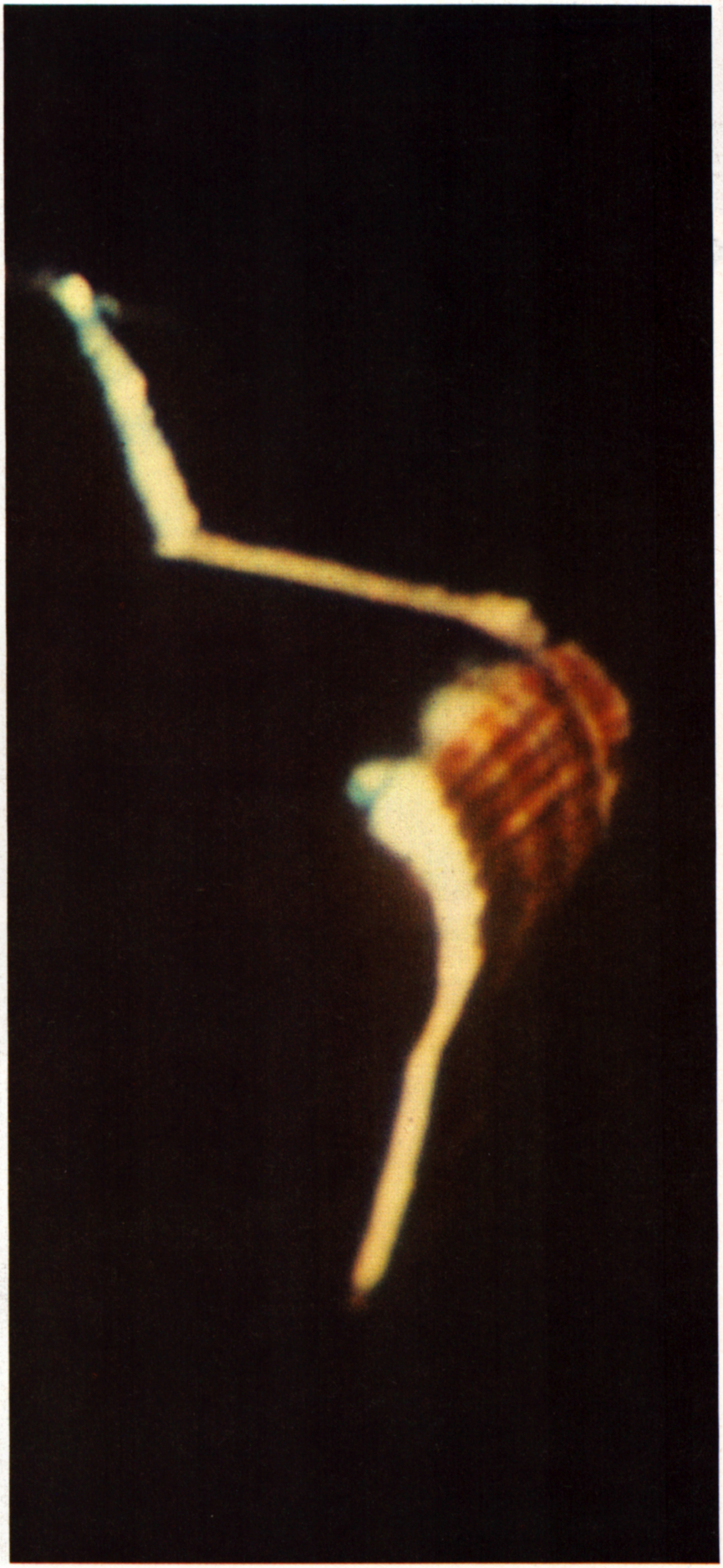
PSYCHIC PHOTO FILE



Right: Stella Lansing, a housewife from Massachusetts whose ability to capture phantom forms, flashes of light or UFO-like objects on film began after a close encounter with a UFO in the 1960s. Since then she has produced well over 500 colour ciné films as well as still photographs that show strange artefacts that were invisible to the naked eye. Mrs Lansing feels compelled to aim her camera at, say, a street scene by a sudden sensation of cold or simply a strong intuition. UFO enthusiast and psychiatrist Dr Berthold Schwartz has been investigating Mrs Lansing for several years and is convinced of the genuineness of her psychic photography.

Can the camera 'see' what the human eye cannot? Spiritualists and psychics have often offered photographic 'proof' of their beliefs, but all too frequently the 'paranormal' effects have turned out to be the result of faulty equipment – or downright fraud. Yet, as we show, some psychic photographs, although controversial, remain unexplained

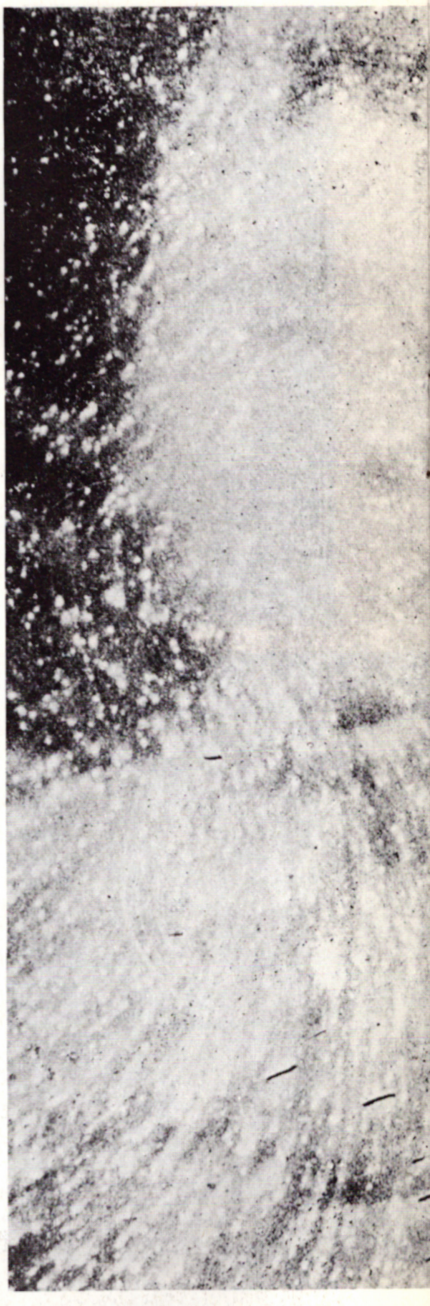
London medium Gladys Hayter has specialised in psychic photography since 1970 when she bought an Instamatic and noticed bizarre effects in her photographs, such as shadowy figures, swirls of light and the apparent disappearance of objects or people actually present when the photograph was taken. The fuzzy ball of light in her lap (above) she interprets as the spirit form of a dead poodle. She customarily sits in near darkness, with her camera on a tripod and holding a cable release. She does not use a flash: she believes the light is provided by the spirits. Sceptics have explained her pictures as the result of a leaking camera, but a few other people have obtained odd results when they have taken photographs of the medium using their own cameras.



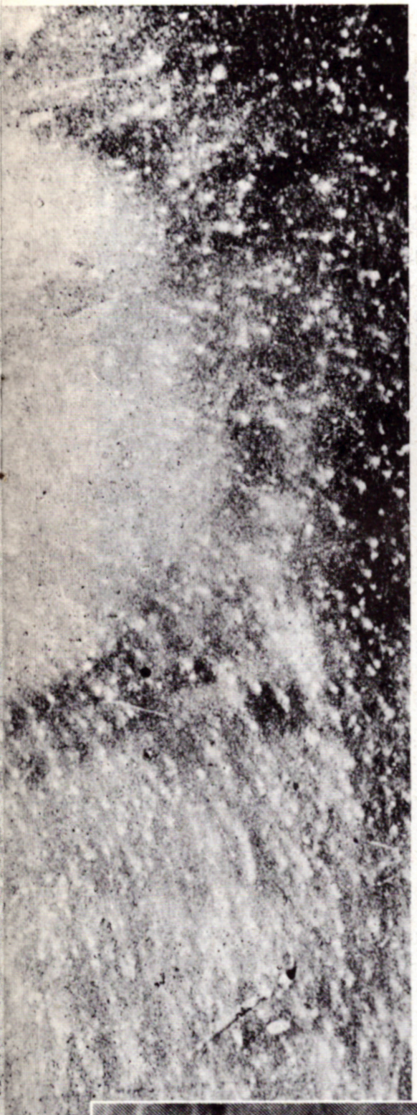
Above: a detail from Stella Lansing's 'clock-like' formations (left), which seems to be a classic UFO disc shape when 'frozen'. Mrs Lansing actually saw this object as a single light moving in 'fast, erratic patterns', which appeared as this circular formation only when the Super 8 Kodachrome ciné film was scrutinised frame by frame. What Mrs Lansing considers to be a 'madonna-like' figure can be seen at the top of the picture, as if moving in a fast spin from the 12 o'clock to the 1 o'clock positions.

Right: a frame from a ciné film taken by Mrs Lansing in February 1967 of a UFO that 'took off from the knoll of a hill within a high tension line area . . . in a sudden burst of white light which, as it ascended, changed colours and then became a mere star-like flashing light . . . .' She considers that the leg-like protrusion at the top of the luminescent UFO could be landing gear of some sort.

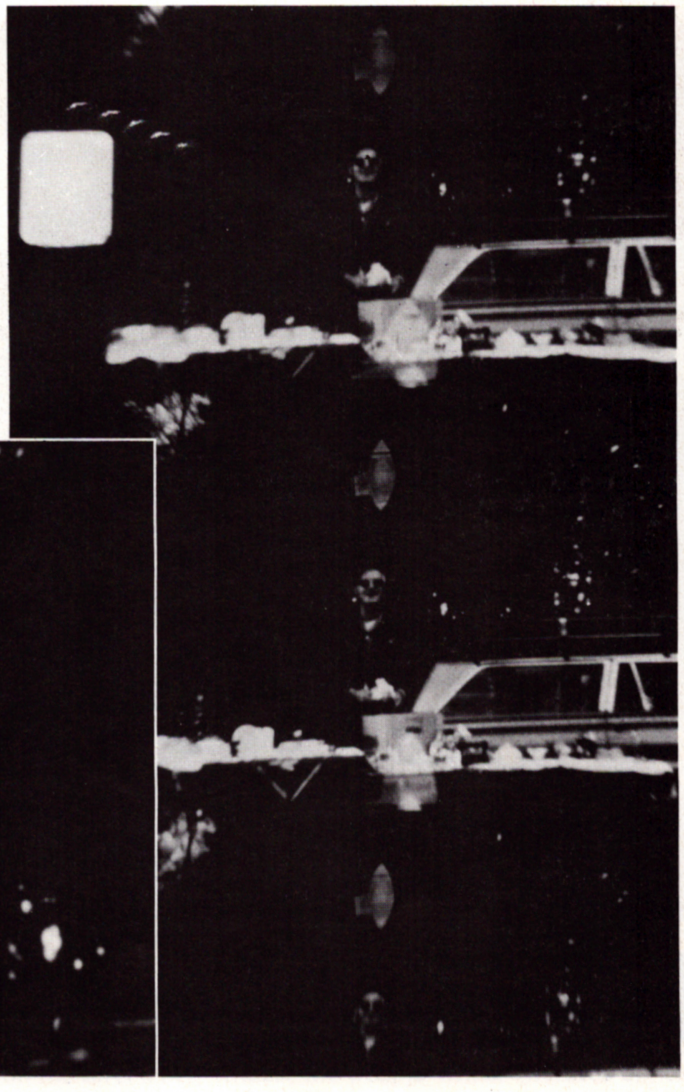
PSYCHIC PHOTO FILE



Left: two UFOs, including one described by Stella Lansing as a 'Saturn-type', taken with a Super 8 movie camera from Route 32A near Petersham, Mass., during October 1974. Mrs Lansing described the object on the left as 'travelling on edge' and as 'coming through into our dimension'. She has had, apparently, many such sightings in the area, both at night and during the day, believing that 'the attraction is the reservoir dam and the power lines', which implies that she assumes these UFOs to be 'nuts and bolts' objects, not subjective psychic phenomena that can be seen by others only on film.

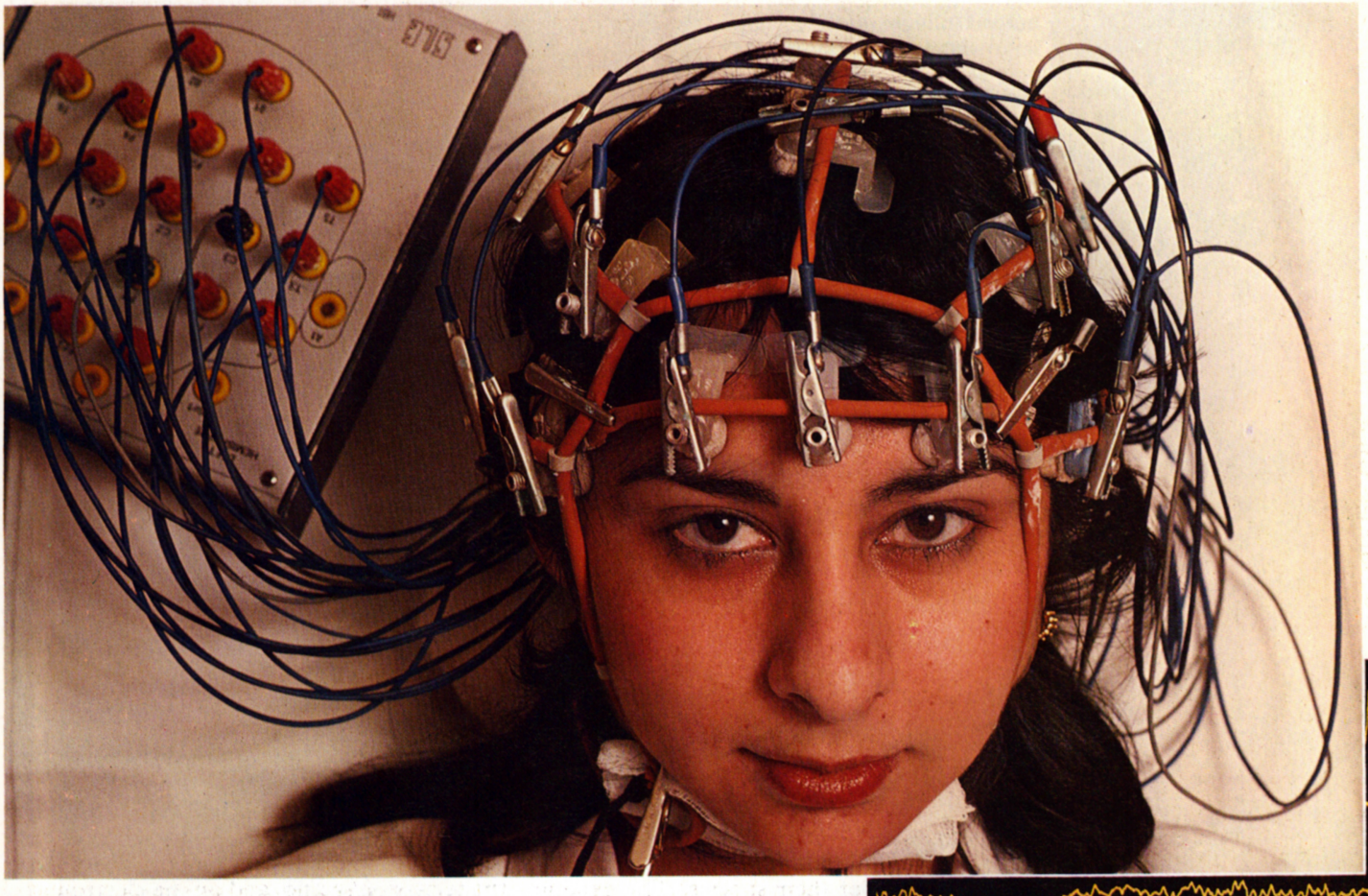


Although the mechanism behind thoughtography – the impressing of mental images onto film – remains a mystery, the phenomenon seems to exhibit marked characteristics. For example, the feathery, swirling effects seen in the work of Ted Serios (see page 710) have also been noted in that of Charles Lancelin (left) at the turn of the century, and in that of Professor Tomokichi Fukurai (bottom) of the Imperial University, Tokyo, between 1910 and 1913.



Above: three frames from a ciné film taken by Stella Lansing of an old man wrapping up his merchandise in a flea market. It was only when the film was processed that the diamond-shaped object was noticed, apparently moving upwards in front of the old man. As it does so it appears to change his appearance and simultaneously seems to become transparent. When it reaches his head it solidifies again. On scrutinising the film Mrs Lansing noticed a second mystery object (above left, to the lower right of the picture); this had the effect of making both the man and the first object invisible in the next frame of the film, which appears totally black.

The second object also rises above the man's head and instantly both the first object and the man are visible once more. Mrs Lansing said: 'However fantastic this may sound, I feel that there is a human image inside of the . . . object . . . .' One of the frames appears to be suffused with an amber tint, a phenomenon frequently noted by Mrs Lansing. She offers no dogmatic explanation for her psychic films, but says: 'It's like a psychic connection with something, or someone, which causes me to grab my camera and film . . . . Not that I hear a voice but I sense something, as though I am being controlled.'



Beyond the brain

Many scientists believe that the mind is nothing but an aspect of the electrical and chemical changes that occur in the brain. Is there any experimental evidence for this point of view, asks RUPERT SHELDRAKE, or does the mind exist independently?

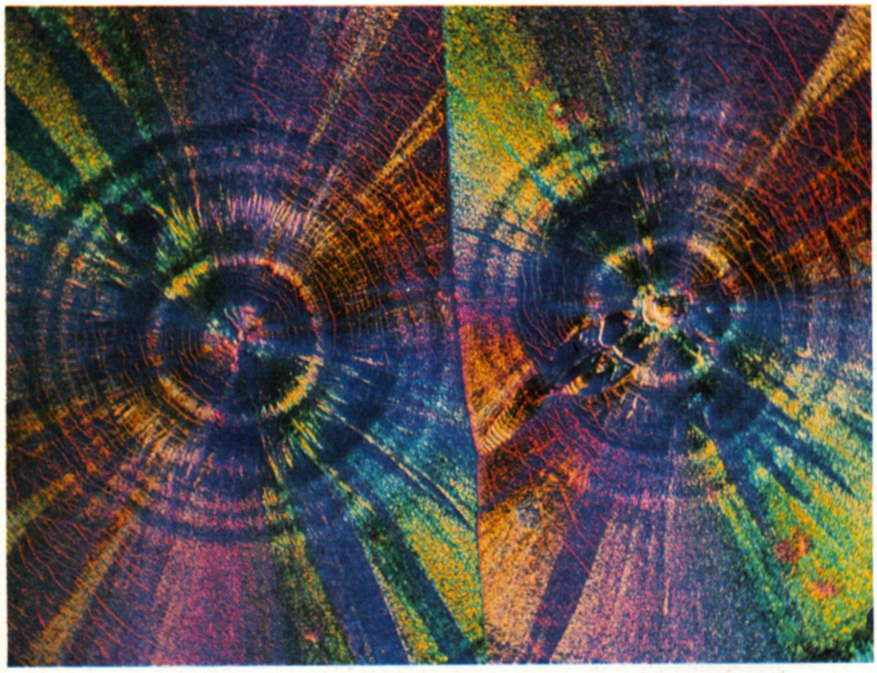
Above: a patient wired up to an electroencephalograph machine (EEG), which monitors the electrical impulses produced by the brain, and (inset) a typical EEG read-out from a normal brain. The EEG read-out can indicate the characteristic patterns associated with different states of brain activity – waking, deep sleep, dreaming and so on – but it cannot tell what actual thoughts are passing through the *mind* of the patient

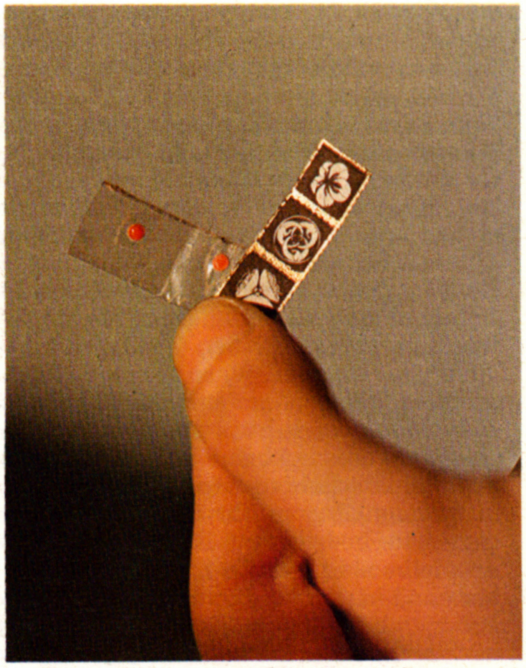
OUR DREAMS, DESIRES, MEMORIES, feelings and thoughts, our hopes and fears, even the way in which we experience the world around us, are nothing more than the product of chemical and electrical changes inside our brains. So when our brains stop functioning at the time of death, all our mental activity will cease; there is no possibility of our conscious survival of bodily death.

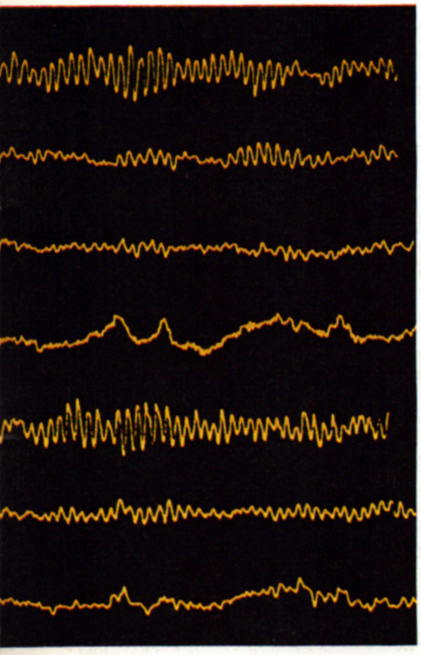
This, at any rate, is the belief that arises from the philosophy of materialism. According to this view, life arose by chance in a purposeless Universe, animals and plants evolved as the result of nothing more than chance genetic mutations and the blind forces of natural selection (see page 1161), and Man is nothing more than a complicated machine. This is not a theory that can ever be proved; in fact, it amounts to a kind of atheistic creed.

Nevertheless, materialists often speak as if the successes of science in dealing with physical and chemical aspects of animals and plants support the idea that life is nothing but a complicated set of chemical and physical mechanisms. The fact is, however, that many aspects of living organisms have eluded explanation in purely mechanistic terms. The way in which trees grow from seeds and animal embryos from fertilised eggs, for example, involves more than the production of the right kinds of chemicals.

This author has proposed an alternative theory to account for these inherited abilities of animals and plants. According to this hypothesis, the form and behaviour of an organism is shaped by 'morphogenetic







Top: a photograph of hippuric acid, at a magnification of 150. The bright colours and abstract patterns are typical of certain types of drug-induced hallucination. Tiny amounts of lysergic acid diethylamide (LSD), for example, a colourless liquid that can be taken orally on small pieces of absorbent paper or bound with strychnine to form minute tablets or micro-dots (top right, left to right), can produce hallucinations that go well beyond the normal range of activity of the human brain

fields', which impose order and pattern on physical processes within living tissues, including the brain (see page 1141). These fields are built up by a process called 'morphic resonance' from past members of the species, and represent a kind of collective memory. Organisms 'tune in' to them, and through them, to the form and experience of past members of their species. The genetic material, in the DNA of the genes (see page 1142), can affect the tuning system, but the shapes and instincts of the organism are not inherited *in* the DNA – any more than the people whose images appear on the screen of a television receiver are carried *inside* the wires and transistors of the set. A correctly wired set is, of course, necessary for tuning in; but the factors that give rise to the pictures come from outside the set.

In a similar way, the brain may be rather like a complicated tuning system; in particular, it is possible that it can be tuned to influences from its *own* past. This implies a theory of memory quite different from the conventional mechanistic theory, which assumes that all mental processes must depend on chemical or physical changes inside the brain: perhaps memories are not, after all, stored as 'traces' in the nervous tissue, but are picked up by the brain tuning in to morphic resonance from its own past states (see page 1941).

Materialists often argue that the fact that states of mind can be influenced by physical and chemical changes in the brain shows that they are nothing but products of brain activity. For example, consuming very small amounts of hallucinogenic drugs such as LSD can have dramatic subjective consequences.

But these facts do not mean that conscious experience is nothing but an aspect of changes in the body. Think of the analogy of a television set: the pictures on the screen can be affected by disturbing the wiring inside the set – or, for that matter, by pouring chemicals into it. But this does not mean that the pictures arise inside the set, or that the events shown on the screen are nothing but an aspect of what is happening within it. They do indeed depend on the set, but they also depend on what the people are doing in the television studio, and on the electromagnetic waves by which the image of the events in the studio is transmitted. If the set is badly damaged and the pictures on the screen disappear, the activity in the studio continues; the people whose pictures appeared on the screen have not been destroyed just because the set has 'gone dead'.

The pattern of the brain

Measurements of electrical activity within the brain using instruments such as the electroencephalograph (EEG) have shown that there are characteristic patterns associated with different states of consciousness such as waking, deep sleep and dreaming. But while it is possible to tell from an EEG record when someone is dreaming, for instance, it is not possible to say what is going on in his dreams. It is rather like measuring the vibrations in a cinema projection room: they reveal whether the projector is projecting a film, rewinding, or switched off. But they cannot give any information about the subject matter of the film. Most of what is known about brain activity is as general as this. There is certainly no evidence that every image or thought that we experience is paralleled in detail by specific physical or chemical changes inside the brain.

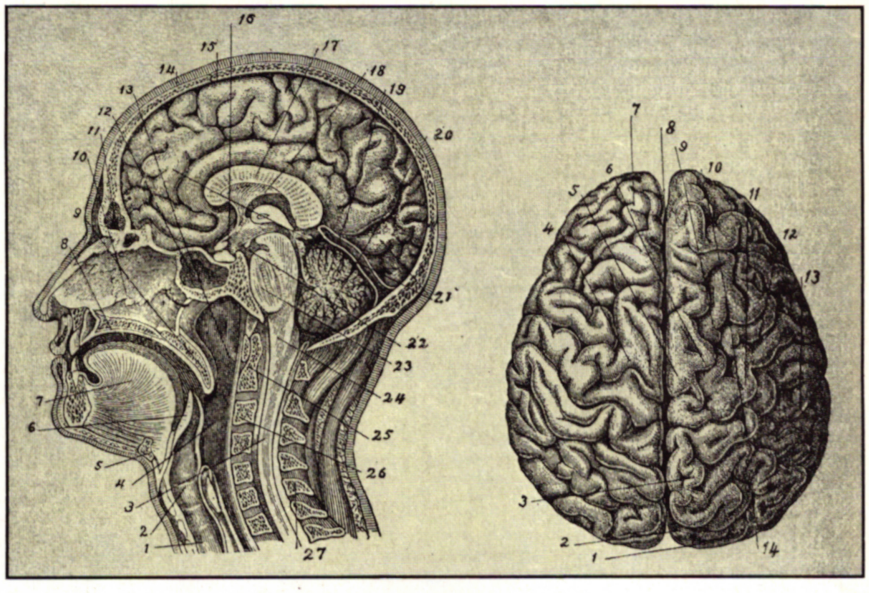
Another analogy that helps to demonstrate how states of mind depend on what happens in the brain, and vice versa, is provided by a pilot in an aeroplane. While the aeroplane is in flight, the pilot's actions

are dictated by his interpretation of the readings on the many dials in the cockpit, wired up to instruments in various parts of the body of the aircraft. He also responds to what he sees in the sky around him and to radio messages from air traffic controllers on the ground. In turn, the actions of the pilot on the controls govern the thrust of the engine and the mechanisms that alter the direction and altitude of flight. But in spite of the fact that changes in the aeroplane influence the pilot, and changes in the pilot influence the aeroplane, the two are obviously not the same. When he has landed the aeroplane, the pilot can get out and leave; and if the aeroplane is badly damaged in flight and seems likely to crash, the pilot can bale out and parachute to safety.

In a similar way, the conscious self can control the body in the waking state, and is in turn influenced by what happens within the body and in the environment around it, and also by what other people say. But in sleep and in dreams, the mind may not be so closely linked to the states of the body. On the aeroplane analogy, sleep and dreaming correspond to the states of the aeroplane on the ground, with its engine ticking over or switched off; under these conditions, the pilot can leave the controls and wander around within the aeroplane, or leave it altogether. But even when the aeroplane is in flight, the pilot's state need not always be closely linked to the state of the aircraft: he can put it under the control of the autopilot mechanism, and then chat with other members of the crew or read a book. Similarly, in the waking state, the mind may sometimes be less closely connected with the state of the body than usual, for example when daydreaming or lost in thought.

One further analogy may help to make the point that it is possible for the mind and the brain to be closely related without being the same thing. The brain may be compared to a complex computer, as materialists themselves like to point out. But by itself the computer 'hardware' can do nothing of significance. It works only when programs are fed into it. These programs are not part of its wiring, but are created for particular purposes by a conscious, intelligent person – the computer programmer. The programmer's activities are influenced by the way the computer performs, and the computer is influenced by his programs; but the programmer and the computer are not the same.

The idea that the conscious self and the body interact with each other but are not merely aspects of the same thing is known as dualism or interactionism. It is the view taken by most of the greatest philosophers



Above: a 19th-century illustration of the human brain. According to the mechanistic view of life, which is held by many scientists, what we call our mind is merely the product of processes that take place inside our brains

Below left: an aeroplane pilot. One possible way of understanding the link between mind and brain is in terms of flying an aeroplane: although the actions of the pilot and his craft are closely linked, the man and the machine are clearly not the same thing

Above: an operator feeds a 'floppy disc' – which stores information – into a microcomputer. Materialists like to point out that the brain itself may be compared to a giant computer – but a computer is nothing without its program, which is created by an intelligent human being

from Plato onwards; an authoritative statement has been made in a book called *The self and its brain* (1977), written jointly by Sir Karl Popper, a distinguished – and often controversial – philosopher of science, and Sir John Eccles, an eminent brain scientist. Meanwhile, the theory that the mind is nothing but an aspect of the functioning of the brain continues to be defended by materialist philosophers, and the debate goes on year after year.

Perhaps the main attraction of materialism is that it seems to offer a relatively simple and straightforward view of the Universe in terms of matter and the laws of physics. It proclaims that there is only one kind of reality, that which can be measured physically with scientific instruments. It eliminates the possibility of the existence of God and rejects all religious beliefs relating to life after death. But although this philosophy may have a certain intellectual appeal, does it correspond to the way things are, or is it a gross over-simplification?

In relation to its claim that mind and brain are identical, or that the mind is like a passive shadow of the activity of the brain, there is no evidence in favour of materialism that cannot be explained just as well, if not better, by the interactionist theory. There are even some very awkward facts that suggest that the role of the brain may have been greatly overestimated. It has long been known that some people who have suffered from hydrocephalus, or water on the brain, have greatly reduced amounts of brain tissue: the skull is mainly filled with fluid (see page 1942). Yet in spite of this they may be quite normal.

Are brains necessary?

Studies on people of this type by Professor John Lorber, of Sheffield University, using modern tissue scanning techniques have led him to ask, in a 1982 paper, 'Is your brain really necessary?' He spoke of one case: 'There's a young student at this university who has an IQ of 126, has gained a first class degree in mathematics, and is socially completely normal. And yet the boy has virtually no brain.' The student's doctor at the university noticed that he had a slightly larger than normal head, and so referred him to Lorber simply out of interest. 'When we did a brain scan on him,' Lorber continued, 'we saw that instead of the normal 4.5 centimeter [2-inch] thickness of brain tissue between the ventricles and the cortical surface, there was just a thin layer of mantle measuring a millimeter or so.'

Lorber's findings pose a dramatic challenge to conventional ideas about the role of the brain, and are a severe embarrassment to materialistic theories of the mind.

In relation to the question of the possible personal survival of bodily death, the materialist theory conflicts with the evidence from Spiritualist phenomena, memories of past lives in cases suggestive of reincarnation, and the apparent separability of the centre of consciousness from the body in out-of-the-body experiences, particularly those experienced by people near to death. Even if some of this evidence can be explained in terms of telepathy, clairvoyance or precognition rather than in terms of the survival of the conscious self or soul, the recognition of the existence of such parapsychological powers would mean that the mind has properties beyond those explicable in terms of physics. Since all this evidence lies outside the scope of orthodox science, materialists can only ignore it or attempt to dismiss it.

There is no persuasive logical, philosophical or scientific reason why we should accept the materialist theory that the mind is nothing but an aspect of the functioning of the brain. The idea that the mind *interacts* with the body seems to make more sense of actual experience – and it leaves open the possibility of a conscious survival of death.

Near-death experiences – and the possibility that the mind survives death. *See page 2486*

Left: a Roman mosaic showing the nine muses – goddesses, daughters of Zeus and Mnemosyne, who were considered to govern all aspects of the arts. The origin of creative inspiration was, for the ancient Greeks and Romans, to be found with these goddesses – not inside the head

Seeker after psi

Can ESP and PK be monitored using electronic equipment – or are such matters fated to remain unexplained? Colin Brookes-Smith brought his engineering skills to the field of experimental parapsychology – and JULIAN ISAACS describes the results

Colin Brookes-Smith, an engineer, brought a practical mind to bear in psychical research. His workshop (top) gives some indication of his dedication. His closest allies, his widow Irene (above, demonstrating one of his specially constructed tables) and the psychologist Kenneth J. Batcheldor (above right, on the right next to Brookes-Smith) continue his research

COLIN BROOKES-SMITH died on 3 March 1982. Although he did not begin his parapsychological research until he retired as an engineering executive in the 1960s, his contribution to this field was immense. He will particularly be remembered for his work with psychologist Kenneth J. Batcheldor and their classic experiments into the nature of paranormal levitation, especially through psychokinesis (PK) sitter groups.

They met when Brookes-Smith, as a member of the Physical Phenomena Committee of the Society for Psychical Research (SPR), visited Batcheldor in 1966. They were to become life-long friends.

At the time of their meeting Batcheldor was experimenting with sitter groups, whose aim was to try to produce PK without any implicit belief in the intercession of paranormal agencies, such as the spirits of the dead. These groups sat around a table, usually in darkness – and waited for something to happen. And it often did.

Brookes-Smith was impressed with what he saw and determined to bring his engineering skills to bear in the recording and analysing of exactly what was going on in the sitter groups. He conjectured that the 'ectoplasm' (which he preferred to call 'tenuous matter') so often recorded in classic Spiritualist seances might have an objective reality and, if this were so, it and its effects could be monitored.

After witnessing spectacular table levitations in Batcheldor's groups, Brookes-Smith decided to run a similar group himself – and so began his series of experiments into the nature of PK.

Brookes-Smith's new group of four sitters began its sessions in January 1971 and continued once a week until July 1972. At first they used an ordinary table, which eventually rose so high that it slipped out of the sitters' reach, even when they were standing.

Brookes-Smith turned next to measuring the force that apparently levitated tables, the 'up force'. In order to do this he designed his 'octagonal dynamometer table'. This was equipped with four wooden panels on its surface upon which the sitters lightly placed their hands. Brookes-Smith speculated that, although the sitters' hands were resting only lightly on the panels, they might be creating a kind of paranormal adhesion that simply pulled the table off the floor – so he built strain gauges into the panels to measure any upward force that might be exerted on them by the sitters' hands.

The total weight of the table was 32 pounds (14.5 kilograms), so that during periods of steady levitation each of the four sitters would be effectively lifting about 8 pounds (3.6 kilograms), but during a sharp rise of the table this force would be substantially increased.

The table was constructed in two separate halves, the top suspended by springs from the central supporting pillar. And with the use of strain gauges this made it possible to discover whether the base pushed up the top during levitation or whether the top pulled up the base. The results clearly showed that

it was the table-top that pulled up the base and not vice versa.

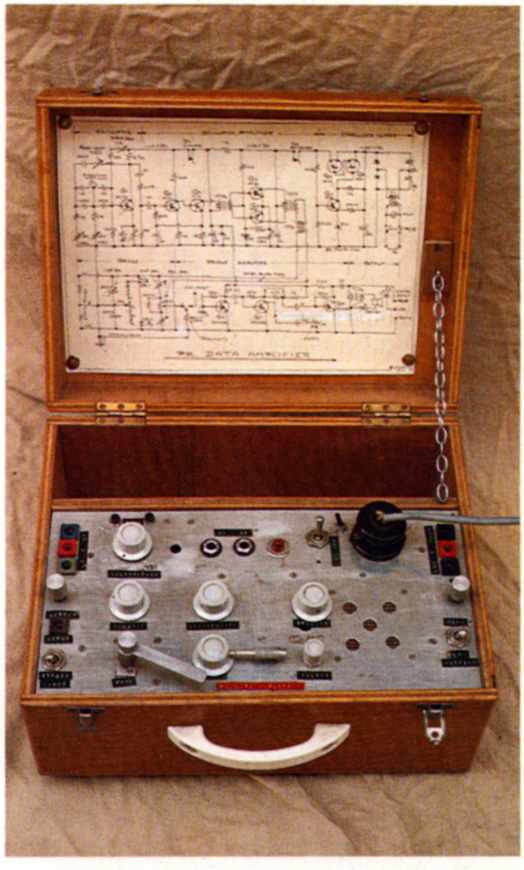
When Brookes-Smith checked the panels he found the up force from the sitters' hands as expected – but, as the periods of levitation lengthened, there were moments when the total upward force from the wooden panels was less than the 32 pounds (14.5 kilograms) needed to keep the table in the air. At times this 'missing' up force was considerably less than needed – up to 15 pounds (6.7 kilograms) was recorded – so where was the extra strength coming from?

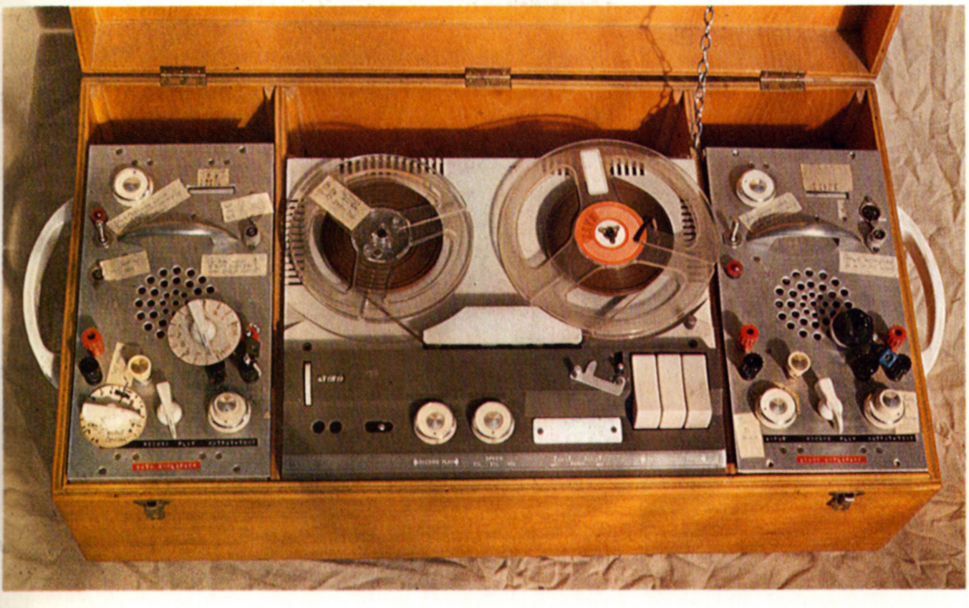
Reaching the heights

Brookes-Smith had apparently demonstrated the existence of paranormal adhesion but had also shown the existence of what was probably a strong PK force – which, as it were, gave the sitters a helping hand in their table levitations. But, ever cautious, Brookes-Smith never claimed publicly that this was so. He also privately considered that genuine PK was responsible for one particularly spectacular incident he witnessed: the 32-pound (14.5-kilogram) table rose explosively from the ground with little or no effort from the sitters; it shot into the air to a height of 5 feet (1.5 metres) in under one second.

Brookes-Smith had seen for himself the kind of levitation produced by the great mediums and had demonstrated both the paranormal adhesion effect of the sitters' hands and the explosive objectivity of the actual PK levitating force. But he had other, more intriguing, discoveries to make.

Batcheldor had been developing his theory that fake levitations – if believed by the group to be real – actually encouraged genuine PK to follow. Brookes-Smith set up a series of experiments designed to test this approach, using a more sophisticated version of his octagonal table, the 'vertical slide dynamometer table'. The first priority was to ensure that any manual 'assistance' would be efficiently detected as soon as it was given. To do this he lined the underside of the table-top with plastic sheets inset with copper strips, which were wired to an electronic recording device: if a sitter lifted the table-top – no matter how slightly – his fingers would bridge the copper strips; the resulting electric current would be detected and tape recorded.





Above: the tape recorder used in the sittings at Daventry, Northamptonshire. Levitations of the table or other instances of ostensible PK were detected by its sensors and converted into a form suitable for tape recording, using the encoder (above right). A stereo recorder was used, so that PK could be recorded on one channel and normal sounds on the other

Whoever was chosen to provide the 'deception' – whoever was dealt the joker from a pack of cards before each session – was to ensure that the data tape would identify his movement of the table by tapping lightly three times on the copper strips just before applying his surreptitious upwards pressure.

This experiment did indeed show that after an 'assisted' levitation, real levitations would follow. It was the first time that instruments of any kind had been used to test Batcheldor's 'deliberate deception' (or 'artefact induction') hypothesis, and it validated it triumphantly. But there was another, quite unexpected, development.

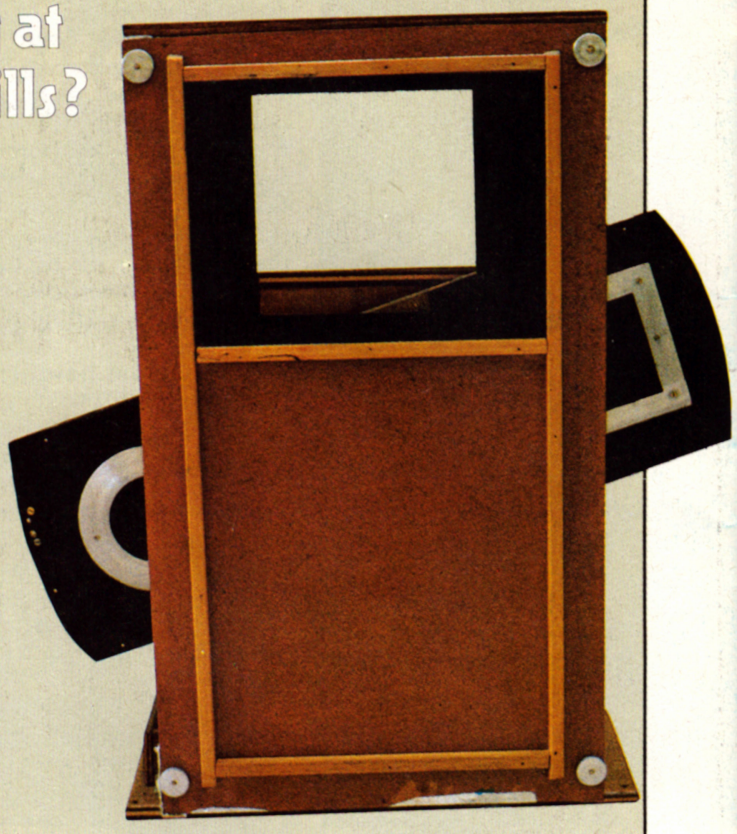
In one session Brookes-Smith himself drew the joker card. So at various stages of the sitting he pushed the table upwards, prefacing each push with the agreed three taps, which would be used later to identify the bogus PK. But when he came to examine the chart recordings of that sitting he was astonished to discover signals from the copper strips that were *not* prefaced by three taps. Moreover, the mysterious signals were present only when genuine levitations had

Tilting at windmills?

Colin Brookes-Smith's last experiments were concerned with the monitoring of how fast 'tenuous matter' or 'ectoplasm' – the hypothetical carrier of information in ESP experiments – travels and whether its arrival at the target object can be detected electrically.

At first the target took the form of a pendulum, which either circled or swung back and forth, some distance – many miles in some cases – from the subject. The time lapse between the beginning of the experiment and the subject 'picking up' whether the pendulum was swinging or circling, was taken as giving an indication of the speed at which tenuous matter travels.

A more sophisticated version involved Brookes-Smith's 'windmill' machine (right), in which a metal circle or a square could be swung round into the 'target position'. The windmill automatically generated a sequence of targets, which incorporated sensitive monitoring systems, so that the moment the tenuous matter arrived could be detected and logged. Although these tests were unfinished by Brookes-Smith, they provided the basis for much of Kenneth Batcheldor's work.



Above: the table used by Brookes-Smith and author Julian Isaacs (left, with the 'vertical slide table') at a PK group at Leamington Spa. The square base was designed by Brookes-Smith to provide a large 'foot' for the PK force to grasp in order to levitate the table. The underside of the 'foot' is covered in wire to detect electrical changes as the PK force grips the table

taken place. His findings suggested that the PK force was a conductor of electricity. He was coming closer to an understanding of the true nature of 'tenuous matter'.

In fact, in the 1980s Professor John Hasted in his work with metal bender Stephen North found what seemed to be a short-lived electrically conducted path created between Stephen and his target object at the exact moment PK took place. In this instance Stephen and his target were separated by only a few yards, but Brookes-Smith conjectured that ESP might be a similar process and capable of operating over longer distances, perhaps as a result of filaments of tenuous matter actually travelling to the target, scanning it and sending information about it back to the subject. His last experiments – the 'windmill' experiments (see box) – were designed to test this theory.

Colin Brookes-Smith's work in psychical research often flew in the face of current parapsychological opinion – and he found answers to few of the searching questions he set himself; but nevertheless his was a determined and gallant attempt to do something practical in a field in which so many are content merely to talk about the nature of ESP and PK from their academic ivory towers.

Many parapsychologists – including this author – owe Colin Brookes-Smith a debt of gratitude. His pioneering research is continued by his widow Irene and Kenneth Batcheldor – and it is producing some extremely encouraging results.

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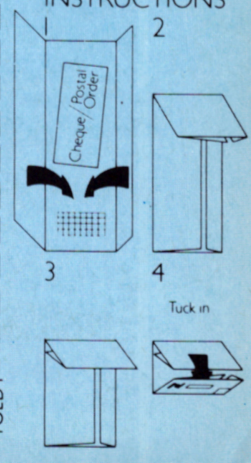

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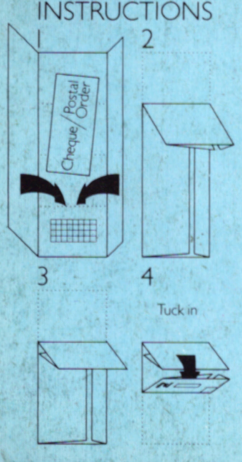

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